

**In the Specification**

**Please delete the paragraph beginning on page 4, line 10, and replace it with the following paragraph:**

In a further aspect of the invention, an apparatus is provided for reworking substrates with copper or copper/nickel pads~~copper-nickel pads~~ containing a nickel layer and an overlying gold layer comprising:

supplying means to supply an electronic component having copper or copper/nickel

pads thereon containing a nickel layer and an overlying gold layer;

etching means to etch the gold layer on the substrate pads preferably using a cyanide containing solution;

etching means to etch the nickel layer on the substrate pads preferably using an alkaline oxidizer containing solution having a pH greater than about 12.0;

treating means to remove products formed during the etching steps and corrosion products from the etched substrate preferably using a cyanide containing solution;

preferably restoring means to restore the copper or copper/nickel pads to its original condition preferably by media (e.g., particulate) blasting; and

plating means to plate the restored copper or copper/nickel pad surface with a nickel layer and an overlying gold layer.

**Please delete the paragraph beginning on page 5, line 8, and replace it with the following paragraph:**

Fig. 1 is a schematic cross-sectional view of an electronic component assembly comprising a substrate having a chip attached thereto with a C4 solder ball interconnection between pads on the substrate and chip.

**Please delete the paragraph beginning on page 7, line 14, and replace it with the following paragraph:**

Any suitable gold etchant may be employed which does not attack the substrate 11 or pad 12 and a preferred etchant is COPKIA RIP Au-2 sold by Uyemura, Inc. COPKIA is an alkaline cyanide containing bath and the substrate 11 is immersed in the bath for a sufficient time at an effective temperature for removal of the gold layer. It is preferred that the etchant be used at room temperature (22-25°C) and immersion of the substrate in the etchant for up to about 10 minutes, e.g., 1.5 to 3.5 minutes was found sufficient to remove the gold layer. It will be appreciated by those skilled in the art that thicker gold layers will require a longer etchant time and also that an elevated etchant temperature will generally reduce the etching time.

**Please delete the paragraph beginning on page 9, line 1, and replace it with the following paragraph:**

After the restoration step, the copper pad is now in condition for plating to form the desired pad metallurgy which is typically a copper or copper/nickel pad~~copper-nickel pad~~ having a layer of nickel preferably electroless nickel phosphorous (NiP) having about 6 to 10 weight % phosphorous and an overlying layer of gold.